

Identification of immune proteins in the pallial mucus of the oyster *Crassostrea virginica*

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The body surface of marine invertebrates is often covered by a layer of mucus, a slippery gel secreted by mucocytes (or goblet cells) lining epithelia. The functions of this gel are diverse and include locomotion, cleansing, food particles processing and defense against physicochemical injuries and infectious agents. In oysters, mucus covering pallial organs (mantle, gills and labial palps) has been demonstrated to have a major importance in particles (microalgae, pathogens) processing. Given the limited information available on pallial mucus in bivalves and the apparent wide spectra of activity of bioactive molecules present in this gel, the characterization of these mucosal secretions has become a research priority. In this study, mucus was collected from the pallial organs of eastern oysters (*Crassostrea virginica*) and analyzed by liquid chromatography and tandem mass spectrometry. Additionally, in order to investigate glycoconjugate molecules, preliminary glycosyl composition was also performed on mucus using gas chromatography/mass spectrometry (GC/MS) methods. Results showed the presence in pallial mucus of a wide range of molecules involved in non-self recognition, defense mechanisms and interactions with microbes. Mucus composition was different among samples collected from different organs. These results generate a reference map for *C. virginica* pallial mucus to better characterize the various physiological functions of the mucus. Research is ongoing to assess changes in mucosal immune proteins in response to pathological or environmental alterations.

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